

## INTRODUCTION

- Children ≤5 years are particularly vulnerable to scalds and contact burns.<sup>1,2</sup> In Canada, burns are a leading cause of emergency department visits and hospitalizations among children aged 0-4.<sup>3</sup>
- These injuries often require stressful intensive medical therapy and support, and can result in long-term physical, emotional and functional impairments, which place a high burden on the child, the family and society.



**Determining the societal costs of caring for young children with burn injuries is essential to support investments in burn prevention programs that may ultimately decrease the costs and incidence of these preventable injuries.**

## OBJECTIVES

- To determine the average cost to society of a 0-4 years old patient with a burn injury.
- To estimate the economic burden of child burns in British Columbia (BC), Canada.

## METHODS

**1- MICRO-COSTING APPROACH:** Costs of services and resources used by children aged 0-4 years old who were treated at BC Children's Hospital (BCCH) between January 1, 2014 and March 15, 2018 for a burn injury were estimated and summed.

- The following categories were used to estimate the costs of partial and full-thickness burns according to the %TBSA involved.
  - Department care
  - Pharmaceutical drugs
  - Medical imageries
  - Dressing changes /Garments
  - Healthcare professional and physician services
  - Transportation/ Accommodation
  - Caregivers' productivity loss

**2- POPULATION-LEVEL APPROACH:** The average cost of burn injuries per %TBSA estimated by the micro-costing approach was then applied to the number of young children who were treated for a burn injury (ICD-10 codes- burns and corrosions T20-T32) across British Columbia between January 1, 2016 and December 31, 2016 (latest data available).

- The number of children was estimated according to Discharge Abstract Database (hospitalizations) and National Ambulatory Care Reporting System (emergency department visits).

## RESULTS

- There were a total of 342 children aged 0-4 years who were treated at BCCH during the period of this study, of which 203 (59.4%) were boys. A majority of children (60.8%) suffered from a 1-5% partial-thickness burn.
- The costs of partial and full thickness burns with similar %TBSA were not significantly different; they were grouped under the same burn severity categories.

Table 2. Average per-child cost of burn injuries by burn severity, 2018\$CAD, BC, 2014-2018

Cost category	%TBSA			
	1-5%	6-10%	11-20%	>20%
<b>Emergency department visits</b>	309.60	409.80	226.20	0
<b>Inpatient</b>	157.60	3,790.00	7,059.00	91,499.00
Emergency department	31.16	225.20	412.50	315.50
Surgery	170.80	2,477.80	3446.00	151.74
Burnbath	55.95	572.40	709.00	32,759.00
<b>Day Surgeries</b>	236.80	447.20	0*	0*
<b>Outpatient burnbaths</b>	73.65	1,459.60	3,180.00	1572.00
<b>Outpatient dressing change visits</b>	1,148.10	768.10	564.30	428.60
<b>Clinic visits</b>	305.30	1,410.20	1,897.50	6,401.00
Garments	34.76	260.15	424.11	3,304.00
<b>Caregivers' productivity loss</b>	911.60	2,269.60	2,860.60	9,362.00
<b>TOTAL</b>	3,167.90	10,983.00	16,783.10	109,729.00

A total of 518 children, age 0-4 years, were treated for a burn injury in BC in 2016, of which 18 were hospitalized. The societal child burn costs in BC in 2016 was of \$2,711,255.01.

\*There were no day surgery reported for patients with a 11-20% and >20%. These patients may have required surgeries after the end of the study period.

## CONCLUSIONS

- **Pediatric burn injuries place an important, yet preventable economic burden on society.**
- Preventing even a few severe pediatric burns or multiple small burns may have considerable economic impacts on society and allow for the reallocation of healthcare funds towards other clinical initiatives.
- This evidence may persuade policymakers and clinicians to invest in pediatric burns prevention programs in order to decrease pediatric burns costs allowing for the allocation of funds towards other clinical initiatives.
- This costing model may also facilitate cost-effectiveness analyses of burn prevention programs in the coming years.



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## REFERENCES

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